ORIGINAL ARTICLE

IMPACT OF AN EDUCATIONAL INTERVENTION ON KNOWLEDGE OF HEALTH CARE PROFESSIONALS REGARDING HIV-AIDS IN LAHORE, PAKISTAN

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Background: The Acquired Immunodeficiency Syndrome (AIDS) is a disease associated with stigmatization and discrimination worldwide. Even the health care professionals show negative attitude towards these patients. Worldwide need of health education is felt to address the gap in knowledge and attitude of health care professionals while dealing with patients suffering from this disease. **Methods:** It was an educational interventional study, conducted in Fatima Memorial College of Medicine and Dentistry in 2015. The sample was collected through Non-Probability purposive technique, targeting both male and female health care professionals interested in attending health education sessions on HIV-AIDS. A self-administered questionnaire was used to assess the knowledge of thirty participants for pre- and post- intervention. **Results:** The study participants included public health professionals (50%), dentists (16.7%) and clinical professionals (33.3%). A significant difference was observed in knowledge of health care professionals after intervention considering the important reasons as deteriorating moral value (p=0.045) for HIV epidemic in Pakistan, prevalence status of HIV/AIDS (p=0.046), awareness about the free voluntary counselling and testing (VCT) centres /services (p=0.019), interaction with an HIV positive person (p=0.01), discriminatory attitudes due to family member (p=0.032) and availability of services for people living with HIV in Pakistan (p=0.02). **Conclusion:** Health educational intervention is a powerful tool for increasing awareness of health care professionals.

Keywords: Healthcare professionals, Education intervention, HIV/AIDS

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INTRODUCTION

The Acquired Immunodeficiency Syndrome (AIDS), caused by Human Immunodeficiency Virus (HIV), has become a major global issue of public health.[1]

According to World Health Organization (WHO), so far HIV has claimed more than 34 million lives. Globally, 1.2 million deaths were reported due to HIV-related causes, approximately 36.9 million people were living with HIV and the number of people who were newly infected with this virus were 2.0 million.[2]

Among the developed countries, an estimated 107,800 people were living with HIV in the UK, 6,000 people were newly diagnosed with HIV infection and 320 people were reported with AIDS.[3] The most severely affected area is that of Sub-Saharan Africa, accounting 71% of the people living with HIV infection.[4] In Eastern Mediterranean Region, the estimated number of people living with HIV were 280,000.[5] The third largest epidemic of HIV exists in India, where 2.1 million people were living with HIV which accounts for 0.3% prevalence rate, whereas in China, prevalence is less than 0.1% with 780,000 people living with HIV.[6] In Pakistan the estimated number of people living with HIV was 68,000.[7]

HIV/AIDS is a disease which is spreading rapidly due to ignorance about the mode of transmission. Misconceptions about the disease are one of the leading causes of stigmatization and discrimination in the society.[8] In developed countries the transmission is mainly due to homosexuality and drug abuse, whereas heterosexual spread plays a pivotal role in developing countries.[9] In Pakistan injectable drug users are among the most vulnerable group showing the prevalence of HIV. In this context, the general practitioners can be of assistance in the prevention of this disease.[10]

Preventive strategies play an important role in the control of disease progression, which includes information, education and communication (IEC) or behaviour change communication (BCC) which should be carried out at regular intervals to increase the level of knowledge.[11] The HIV epidemic can be dealt with adequately if the health care professionals are trained and regularly sensitized with doctors playing the most important role in it.[12]

In Pakistan, HIV-AIDS is a stigmatized disease due to low education and religious perceptions.[13] Healthcare staff also show a stigmatized behaviour towards such patients which is mainly due to low awareness about HIV transmission and risk factors.[14] Pakistan AIDS Control Programme

is improving awareness about HIV-AIDS. Despite of this effort, there still remains low awareness in the community as well as among doctors.[15] The objective of the study was to determine the level of knowledge related to HIV-AIDS among doctors and to compare their knowledge pre- and post- educational intervention.

MATERIAL AND METHODS

The study was carried out in Fatima Memorial Hospital College of Medicine & Dentistry, Lahore, Pakistan. It was an Education Interventional Study with the duration of 6 months, December 2015 to May 2016. A single group of health care professionals was enrolled on voluntary basis to increase their knowledge as part of Continued Medical Education (CME) Program. They included doctors and dentists from different hospitals of Lahore as CME was announced in all leading hospitals of Lahore. A non-probability, purposive sampling technique was used to collect a total sample of 30 health care professionals, i.e., all the participants who registered for attending the educational programme. During this educational intervention, multiple tools of instructions were used which included presentations from epidemiologists and representatives of National AIDS Control Program. This program also incorporated multiple role plays regarding stigmatization felt by HIV patients in multiple settings. There were small group discussions regarding coping strategies. Another important feature of this educational program, was interaction with three cases of HIV positive patient who was leading his life successfully in society and at home front. His personal experiences were shared about his feelings of being stigmatized in society and coping strategies. Data was collected in two stages. First the pre-intervention questionnaire was provided to the participants before the beginning of the interventional programme. The programme was in the form of workshop which included the relevant information about HIV/AIDS with updated statistical prevalence globally as well in region and in Pakistan. It also included the modes of transmission, preventive and control measures, the disease control programme in Pakistan, and face to face interaction with three HIV positive patients. These patients work as motivational speakers with Pakistan AIDS Control Program and don't hide their identity. Written consent was taken before their interaction with group of health care providers. Soon after the education intervention the same tool was used as post-intervention questionnaire to record the data. The assessment in change of knowledge and attitude was done immediately after the educational intervention as multiple health care providers belonged to different institutions and it was difficult to get hold of them after the workshop. Approval from the Institutional Review Board (IRB) of the Fatima Memorial System was taken before conduction of study. An informed consent was obtained from each participant and the data confidentiality and anonymity of participants was ensured. The data collection tool was a self-administered questionnaire. For analysis of data SPSS version 21.0 was used. Data was analysed after application of chi square test of significance keeping *p*-value 0.05 as significant to assess the significant difference of knowledge in pre- and post-intervention phase.

RESULTS

The study included a total of 30 health care providers. The mean age of the participants was 37.00±11.333 years, whereas majority of the participants (n=20; 66.7%) were females. All participants were health care professionals of different designations from various specialties, i.e., doctors, dentists and mostly public health professionals (n=15; 50%). (Table-1)

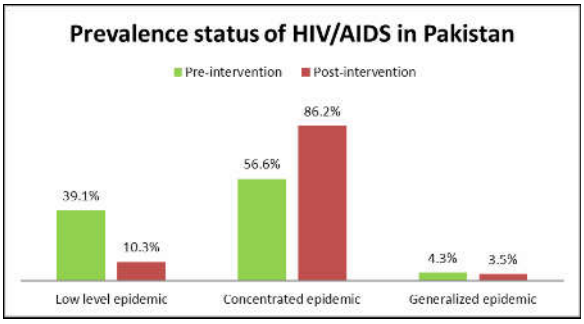

Figure-1: Knowledge about prevalence status of HIV/AIDS in Pakistan

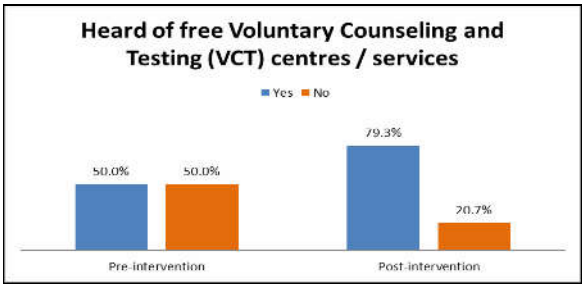

Figure-2: Knowledge about free Voluntary Counselling and Testing (VCT) centres / services

Table-1: Demographic details

Variable	Frequency (n=30)	Percentage
Gender		
Male	10	33.3
Female	20	66.7
Speciality		
Doctors	10	33.3
Dentists	5	16.7
Public health professionals	15	50.0

Table-2: Reason of HIV/AIDS as a disease of public health importance in Pakistan

Reason of HIV/AIDS as a disease of public health importance		Pre-intervention		Post-intervention		*p*-value
		n=30	%	n=30	%	
Increasing number of patients	Yes	13	43.3	18	60	0.196
	No	17	56.7	12	40	
Rapidly spreading disease	Yes	5	16.7	9	30	0.222
	No	25	83.3	21	70	
Deteriorating moral values	Yes	12	40	5	16.7	**0.045**
	No	18	60	25	83.3	
Less services available for disease	Yes	9	30	6	20	0.371
	No	21	70	24	80	

Table-3: Individuals from whom different negative / discriminatory attitudes are faced by the HIV/AIDS patient

Individuals from whom different negative / discriminatory attitudes are faced by the HIV/AIDS patient		Pre-intervention		Post-intervention		*p*-value
		n=30	%	n=30	%	
Spouse	Yes	17	56.7	17	56.7	1.000
	No	13	43.3	13	43.3	
Family member	Yes	15	50	23	76.7	**0.032**
	No	15	50	7	23.3	
Friends	Yes	16	53.3	19	63.3	0.432
	No	14	46.7	11	36.7	
Employer	Yes	15	50	18	60	0.436
	No	15	50	12	40	
Society	Yes	25	83.3	26	86.7	0.718
	No	5	16.7	4	13.3	

Table-4: Satisfied with the roles of institutions for HIV control in Pakistan

Satisfied with the roles of institutions for HIV control in Pakistan		Pre-intervention		Post-intervention		*p*-value
		n=30	%	n=30	%	
Government institution	Yes	3	10	9	30	0.115
	No	27	90	21	70	
Society	Yes	0	0	1	3.3	0.313
	No	30	100	29	96.7	
Media	Yes	8	26.7	9	30	0.774
	No	22	73.3	21	70	

It was observed that all participants (n=30; 100% thought that HIV/AIDS is a disease of public health importance in Pakistan. When asked about the reason that why do they think that HIV/AIDS is a disease of public health importance multiple responses were obtained in pre- and post- intervention phase. Increase in number of patients was mentioned by 43.3% of the participants in pre-intervention phase, which changed to 60% in post-intervention phase. Although there was change in response observed in pre- and post- intervention phase, but it was not statistically significant. No significant difference was observed in responses regarding rapid spread of disease in Pakistan and provision of less facilities for treatment. But significant difference was observed in responses regarding pointing deterioration of moral values as cause of HIV/AIDS (p=0.045). This reason was mentioned as a factor of public health importance by 12 (40%) of the health care providers in pre-intervention phase which was reduced to 16.7% in post-intervention phase. (Table-2)

The results showed that the knowledge about the prevalence status of HIV/AIDS in Pakistan as concentrated epidemic was enhanced after the intervention from 13 (56.5%) to 25 (86.2%) (p=0.046). (Figure-1)

Awareness about how to get tested for HIV/AIDS was among 29 (96.7%) participants before and 30 (100%) after the intervention (p=0.313). Results of, to get tested by observing specific testing protocols, showed increase in awareness after intervention from 10 (35.7%) to 15 (50%) whereas in response to whom to approach the in case of finding any HIV positive person, i.e., any clinical practitioner, laboratory or hospital, no significant result was seen (p=0.93).

The majority 25 (86.2%) of the participants already knew that despite receiving a negative HIV test result a person could still be infected with HIV, and intervention did not show any significant difference in opinion in post-intervention phase (p=0.219). But when asked about, if a client tests positive for HIV, the clinic should inform the client's family/sexual partner of the results, the pre- and post-intervention results showed a decrease in positive response from 25 (83.3%) to 17 (63%) (p=0.081).

About awareness of services which they can provide to an HIV positive patient in the routine daily

work, 15 (93.8%) of them replied health education whereas only 1 (6.3%) said counselling whereas nobody responded to treatment or referral as a service, and no significant change was seen post-intervention (p=0.269). Only 4 (13.8%) participants said that they personally ever go out into the community to encourage people to get tested for HIV whereas the majority 25 (86.2%) did not.

It was observed that 15 (50%) of the participants were aware that free voluntary counselling and testing (VCT) centers/services are available, and the response increased to 23 (79.3%) post-intervention giving a significant result (p=0.019). (Figure-2)

Only 6 (20%) of the participants had attended training on HIV voluntary counselling and testing in the past. In response to opinion that a provider should take the same bio-safety (protective) measures with all clients, regardless of the client's HIV status, 28 (93.3%) agreed with no significant change in response after intervention (p=0.39).

When asked that if someone is infected with HIV, is he/she at a higher risk of becoming infected with other sexually transmitted infections (STI), all 30 (100%) and 28 (93.3%) participants gave a positive response pre- and post- intervention (p=0.15). Similarly, 30 (100%) also agreed that STI testing for clients should be a part of the HIV prevention program with no significant result. Awareness about specific HIV/AIDS control programme in Pakistan was seen among 24 (85.7%) before intervention and among 29 (96.7%) post-intervention (p=0.14).

Only 17 (56.7%) participants had seen an HIV positive person or AIDS patients previously whereas this showed a significant increase to 26 (86.7%) post-intervention (p=0.01).

In the past only 7 (23.3%) participants had attended any trainings or sensitization sessions about HIV/AIDS however after intervention 10 (33.3%) responded that they did (p=0.39). Related to any stigma associated with HIV/AIDS, result showed that 29 (96.7%) agreed with no significant change (n=27; 90%) after the intervention (p=0.30). Half (n=15; 50%) of participants were of the opinion that HIV/AIDS patient faces different negative / discriminatory attitudes mostly from some family member and this number increased significantly to 23 (76.6%) after intervention (p=0.032). (Table-3)

Most of the participants 22 (75.9%) gave the opinion that an HIV-positive woman has the right to become pregnant, and even after intervention 24 (85.7%) agreed to it (p=0.35).

Among the participants 18 (60%) considered themselves informed about the rights of HIV positive people to a lesser extent and this number decreased to 10 (35.7%) after intervention (p=0.064).

Only 2 (6.7%) participants thought that there were enough services available for people living with HIV in Pakistan and the result showed an increase to 9 (30%) post-intervention (p=0.02).

Results of being satisfied with the roles of government institution, society and media for HIV control in Pakistan showed that all 30 (100%) participants were not satisfied with the role of society and no significant change was seen after intervention 1 (3.3%). (Table-4)

DISCUSSION

The educational interventional studies play an important role in increasing awareness and knowledge and delivering latest development and updates to audience. Our educational interventional study conducted included thirty participants, both male and female doctors from different specialties, with community medicine or public health professionals (48.3%), clinical medical professionals (27.6%) and dentists (24.1%). In the last decade several such interventional studies had been conducted among healthcare professional covering different arenas of healthcare which had given positive results in enhancing their knowledge.[16,17]

The first and foremost important factor in the study was the recognition of HIV/AIDS as a disease of public health importance in Pakistan which all (100%) participants agreed upon, and mostly they thought that deteriorating moral value (40%) is the reason but there was a change in the opinion significantly (p=0.045), after intervention that mainly it was due to increasing number of patients. Secondly related to the above factor the prevalence status of HIV-AIDS in Pakistan is important too and this disease exists as a concentrated epidemic in our country.[18] The correct knowledge about it was among 56.5% of the participants initially in our study which was enhanced after the intervention to 86.2% (p=0.046).

Though nearly all (96.7%) the participants were aware about how to get tested for HIV/AIDS but the awareness about observing specific testing protocols was low (35.7%) which increased to (50%) which can be helpful in guiding the patients. As healthcare professionals, the participants already had the awareness that despite receiving a negative HIV test result a person could still be infected with HIV, therefore, no significant results were observed in the study but the important element is that the clients should still be informed about this fact and should be advised about taking tests at regular intervals especially those who are at high risk. As HIV/AIDS is a rapidly spreading disease, it is crucial to decide

that if a client who has tested positive for HIV, should the clinic inform the client's family/sexual partner of the results. Though at first 83.3% of the participants approved this fact but after intervention only 63% gave a positive response. Similar results were seen in a study conducted in Nigeria, where 57% of the healthcare professionals agreed that the relatives/sexual partners should be notified.[19]

Regarding the services which a healthcare professional can provide to an HIV positive patient in the routine daily work, 93.8% and 6.3% participants were aware about health education and counselling respectively. Beside these two services, no participants responded to other important services like treatment and referral which if provided to patients may prove useful in improving their health and quality of life. As far as HIV testing services are concerned, according to WHO should be voluntary and there should be right to decline by patient. These services as recommended by WHO should include the 5 C's, i.e., informed consent, confidentiality, counselling, correct test results and connection (linkage to care, treatment and other services).[2] Free voluntary counselling and testing (VCT) centers/services are available in Pakistan. It was observed that 50% of the participants were aware about these services and this response increased to 79.3% post-intervention significantly (p=0.019). Among the participants only 20% had attended any training on HIV voluntary counselling and testing in the past. It is imperative that the healthcare professionals should be aware about the free VCT centers/services available in their working regions so as to guide and counsel their patients to avail such services. It has been seen that education about HIV/AIDs in affected countries can help people to know about their status and receive personalized counselling for risk reduction and prevention of further transmission of disease.[20,21] In 73 low- and middle- income countries in regions most affected, only 1% of adults 15–49 years of age are actually availing VCT services.[20]

Opinion about taking the same bio-safety (protective) measures with all clients, regardless of the client's HIV status by a provider revealed that 93.3% agreed upon it. Nearly same results were seen in the study in Nigeria, where 81% of healthcare professionals replied that they wore extra gloves/protective gear as protective measures for patient who is either a known or a suspected HIV positive case.[19]

It has been established that STI are important risk factors for HIV infection. STI has been examined in known cases of HIV because it affects immunity and risk of STI increases in such patients.[22] In our current study all (100%) participants responded that if someone is infected with HIV, he/she is at a higher risk of becoming infected with other STIs. In a systematic review of STI prevalence in HIV/AIDS patients, in both developed as well as developing countries, it was stated that mean point-prevalence was 16.3% overall with most common STI being trichomoniasis, gonorrhoea, syphilis and chlamydia.[23]

Also, all participants were of the opinion that STI testing for clients should be a part of the HIV prevention program, though 85.7% were aware of the specific HIV/AIDS control programme being run in Pakistan initially increasing to 96.7% post-intervention which again will be of vital importance in their daily practice dealing with HIV/AIDS patients. Only 56.7% of participants had seen an HIV positive person or AIDS patients previously but it showed a significant increase post-intervention (p=0.01). Meeting with a HIV positive patient during the intervention was an interesting observation as the interaction helped understand many factors related to living with such an infection. Previously 23.3% participants had attended such trainings or sensitization sessions about HIV/AIDS mostly through their organizations.

Stigma and discrimination is one important factor in our societies which has a major impact on people living with HIV/AIDS (PLHA).[22] In our current study 96.7% participants agreed that this stigma is present. In Sub-Saharan African region (Tanzania, Zimbabwe and South Africa) and in northern Thailand, a study was conducted which determined that stigma and discrimination was associated with HIV/AIDS.[23] It was observed that 50% of participants were of opinion that HIV/AIDS patient faces different negative / discriminatory attitudes mostly from some family member and this number increased significantly to 76.6% after intervention (p=0.032). On the contrary, a review of study literature, attributes this the stigma and negative attitudes mostly to the society.[24]

Regarding the right of an HIV-positive woman to become pregnant, 75.9% participants agreed while this awareness increased among 85.7% post-intervention. Cooper *et al.* stated that inspite of being HIV positive women still desired about reproduction and childbearing as it is considered as an important element of an identity of being a woman. On the other hand, there were some who rather decided to avoid pregnancy due to fear that infection can transmit to the child.[25]

The number of participants (60%) who initially considered themselves less informed about the rights of HIV positive people decreased to 35.7% after intervention, and previously 6.7% viewed that there were enough services available for people

living with HIV in Pakistan but post-intervention this figure was 30% (p=0.02) as this platform provided them with some knowledge regarding the rights and services available. Considering the fact that in any country the government institution, society and media can play a huge role for the control of HIV, our study showed that the health care professionals were not satisfied with the society (0%), government institution (10%) and with media (26.7%) whereas post-intervention the role of government became more (30%) evident for them.

In the study as it was anticipated that the health care professionals were lacking in key updates and therefore should have appropriate knowledge update related to HIV/AIDS. It helped us to assess the effectiveness of the education interventional programme. The results provided useful information which can be helpful in conducting such programmes on a larger scale, which may eventually prove beneficial in planning and improving the preventive and control programme of HIV/AIDS in future by involving all healthcare professionals working at various health care levels in the country.

The limitations of the study were that firstly it had a small sample for which further studies can be conducted with larger samples. Secondly the group of participants included healthcare professionals who had prior knowledge about HIV/AIDS.

CONCLUSION

Information, Education and Communication is a powerful tool to enhance the knowledge and awareness of health care professionals. This educational intervention has shown significant difference in knowledge pre- and post- intervention.

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AUTHORS' CONTRIBUTION

IM: Conceptualization of study and data interpretation, abstract writing, proof reading. FK: Literature search, data analysis, data interpretation and write-up. UN: Literature search and write-up. MA: Proof reading and fine tuning of results.

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